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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,066	09/23/2003	Jozsef Szendrovari	DT-6621	5109

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EXAMINER

NGUYEN, GEORGE BINH MINH

ART UNIT	PAPER NUMBER
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3723

DATE MAILED: 01/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

10/670,066

Applicant(s)

SZENDROVARI ET AL.

Examiner

George Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11/01/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Receipt is acknowledged of Applicant's amendment filed November 01, 2004.

Claim 1 was canceled. Claim 13 was added.

Claims 2-13 are presented for examination.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neamand'2,629,588 in view of Watson'1,551,717.

With reference to Figure 1 and 3, col. 2, line 35 to col. 4, line 40, Neamand'588 discloses a moit point for breaking concrete including:

a) a shank 15 for securing the moit point in a power tool.

b) an elongated, tapered body 11 having an outer diameter 17-17 and a pointed extremity 12 in the form of a chisel. Please note that in col. 3, line 65 to col. 4, line 20, the advantage of the tapered boy is disclosed to very measurably increase the general effectiveness of the tool to split and break up the paving material. However, Neamand' does not show a cross-section formed as a concave polygon by a plurality of axial grooves extending up to the tip of the chisel.

FIG. 1

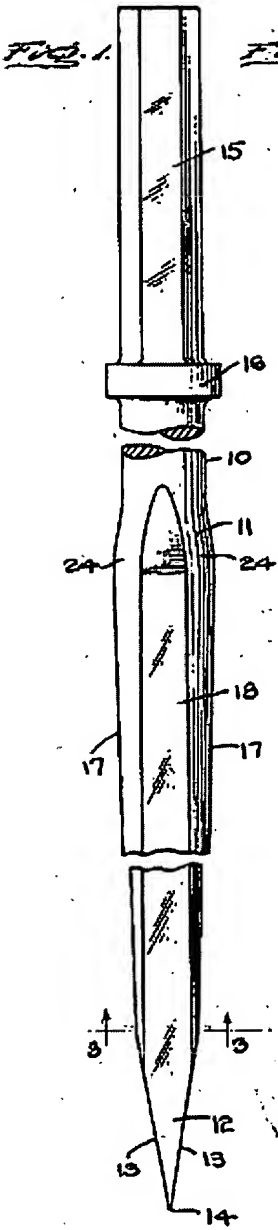


FIG. 2

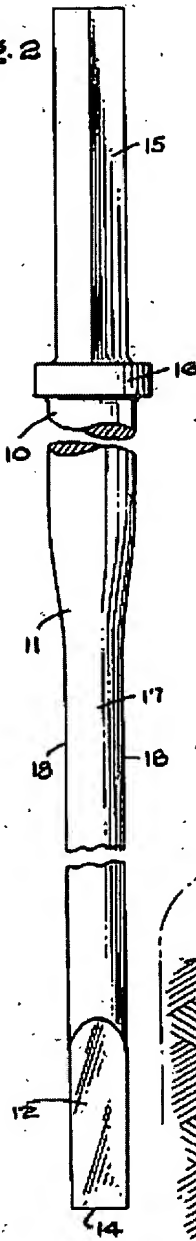


FIG. 5

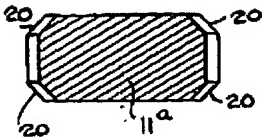


FIG. 6

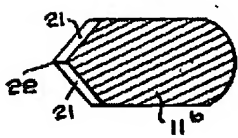


FIG. 7



FIG. 8

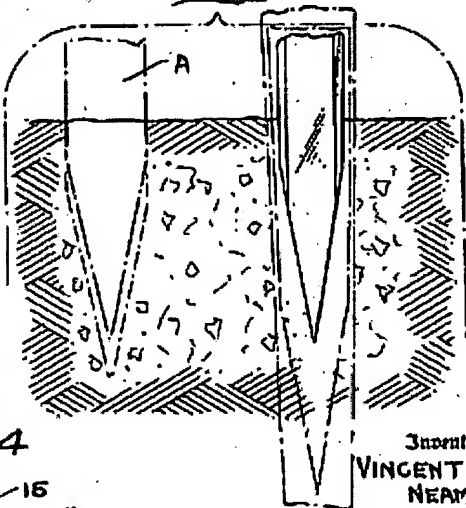


FIG. 3

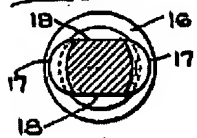


FIG. 4



Inventor
VINCENT
NEAMAND.
By *Lowell*
Attorney

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B,629,588

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blows imparted to the mott point by the hammer mechanism.

In accordance with the present invention, the body 11 of the tool is tapered lengthwise thereof for a substantial distance rearwardly of its pointed extremity 12 to provide a transverse cross-section which is of gradually increasing area toward the collar 16 of the tool. In its preferred form, as shown in Figures 1 to 4, the tapered portion of the tool body 11 extends about one-half the overall length of the latter, it being at least several times the overall length of the pointed extremity 12. Also, in its preferred form, the tapered portion of the body 11 of the tool is of generally oval or oblong form in transverse cross-section, the relatively narrow sides 17—17 being preferably rounded as shown, while the relatively broad sides thereof are respectively flattened to provide the tool with a pair of opposed substantially parallel flat faces 18—18. As appears clearly in the drawings, the rounded sides 17—17 of the tool are those which are relatively tapered lengthwise of the tool, the tapered sides 17—17 being in effect continuations of the relatively inclined opposite faces 13—13 of the chisel-shaped extremity 12. It will be noted, however, that the taper of the sides 17—17 of the tool body is materially less than the taper of the faces 13—13.

In use of the tool of the present invention, it is preferably held so that the flat faces 18—18 of the tapered portion of the tool are parallel to the plane of shift of the tool when the latter is rocked about its pointed extremity as a fulcrum. In order to facilitate such use of the tool, the shank 15 thereof is so formed relatively to the tapered body portion that when the tool is fitted properly in the holding chuck of the pneumatically operated hammer mechanism the major axis of the tapered body portion is automatically disposed in a vertical plane coincident with the longitudinal center line of the mechanism.

Referring now to Figure 3 which illustrates the principle of operation of the tool of the present invention, it will be observed that when the pointed extremity of a conventional tool, such as is designated A, is axially driven into the material to be broken it produces a hole of a maximum size not exceeding that of the tool body, the size of this hole remaining more or less constant regardless of the extent of axial penetration of the tool into the material to be broken. To really break up and dislodge the material, the tool must be operated as a lever, requiring considerable manual effort and it all too frequently becomes so firmly lodged in its hole that it becomes difficult to properly work the tool further or even remove it from the material into which it has been tightly forced. Also, inasmuch as the tool body above the pointed extremity thereof is of uniform cross-section throughout its full length, penetration of the extremity further and further into the paving or the like does not increase the size of the hole punched in the material, but instead only results in excessive heating and premature wear of the point.

In use of the tool of the present invention, materially different results are obtained. Thus, as the present tool axially penetrates the material to be broken up, the material is constantly subjected to lateral pressure tending to split the material open along lines coincident with the vertical plane of the major axis of the tapered portion of the tool body. The greater the axial penetration of the tool into the material, the greater is the force tending to split said material apart, 75

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in consequence of which the hole formed by the pointed extremity 12 of the tool is constantly enlarged in the region of said extremity so as to relieve it of pressures tending to bind or wedge it in place. By so relieving the pointed extremity of the tool of these pressures, it does not become excessively hot nor is it subject to premature wear due to excessive friction. Finally, the splitting action obtained by the tapered body portion of the tool, following penetration of the pointed extremity 12 into the material, very measurably increases the general effectiveness of the tool to split and break up paving material and the like even when the tool is axially directed into the material and not employed as a lever, a result not at all obtainable with mott points of conventional construction. When, in addition to this, the tool is employed as a lever following substantial penetration thereof into the paving material, the latter is very readily broken up and dislodged, because of the breaking strains set up therein by the wedging action of the tapered body portion of the tool.

It will be apparent, of course, that the tool may be varied in cross-sectional form without involving any departures from the principles of the present invention, several of such possible variations being shown, for example, in Figures 5, 6 and 7. In the form of tool shown in Figure 5, the tapered body portion 11^a is generally of rectangular form with its longitudinally extending corner edges chamfered, as at 20.

In the form shown in Figure 6, the taper extends only along one longitudinal edge of the tool body portion 11^b, this longitudinally tapered edge being oppositely beveled, as at 21—21, to provide a relatively sharp splitting edge 22 extending lengthwise of the tool above its pointed extremity 12, the opposite longitudinally extending edge 22 being without any taper but instead being rounded to a surface extending substantially parallel to the tool axis.

Figure 7 shows a tool cross-section generally similar to that of Figure 6 except that the tapered relatively sharp edges 22—22 extend longitudinally along both sides of the tool body 11^c.

It will be noted that the shaping of the tapered side faces is such that transverse chordal distances between these faces is a maximum measured through the central longitudinal axis and a minimum at the junction of these faces with the parallel faces.

In all forms of the tool of the present invention, it is preferable to initially form the same so that the tapered portion thereof in the region of its maximum dimension, as at 34 is of a transverse size somewhat exceeding the diameter of the tool body extending between the tapered portion and its collar 16. Thus, as the tool wears in use, requiring re-grinding of its pointed extremity with consequent reduction in length of the tapered body portion of the tool, sufficient stock is provided at opposite sides of the tapered portion of the tool body to provide for wear along its tapered edges, this wear being uniform so that the degree of taper remains relatively constant throughout the life of the tool.

It will be understood, of course, that the present tool is susceptible of various other changes and modifications which may be made from time to time without departing from the general principles or real spirit thereof, and it is accordingly intended to claim the same broadly, as well as specifically, as indicated by the appended claim.

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With reference to Figure 1, Watson'1,551,717 discloses a drill bit having a shank 1 and body 2 supplied on both sides with longitudinal grooves 3 which terminate in the end face of the bit. In lines 59-65, the grooves 3 are used as water conduit for receiving or discharge water.

Fig. 1.

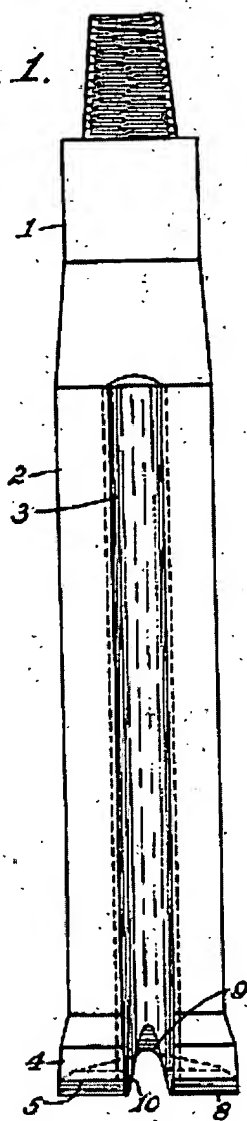
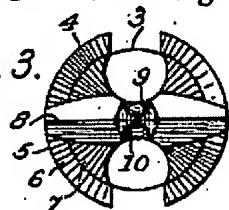


Fig. 3.



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DRILL BIT.

Application filed September 5, 1934. Serial No. 738,163.

To all whom it may concern:

Be it known that I, GEORGE R. WATSON, citizen of the United States, residing at Waterloo, in the county of Black Hawk and State of Iowa, have invented certain new and useful Improvements in Drill Bits, of which the following is a specification.

My invention relates to improvements in drill-bits, and the object of my improvement is to perfect the shape of the bit for drilling rock strata, particularly strata having a relative steep inclination, and to render the action of the bit efficient in reaming, cutting and crushing-dislodged material.

This object I have attained in the drill-bit which is hereinafter described and claimed, and which is illustrated in the accompanying drawing, in which Fig. 1 is a side elevation of the drill-bit of my invention, Fig. 2 is a side elevation thereof taken at an angle of ninety degrees from the elevation of said Fig. 1, and Fig. 3 is a plan of the end face of the bit.

This drill-bit has a shank 1 and body 2 supplied on opposite sides with longitudinal grooves 3 which terminate in the end face of the bit. The inner part of each groove is circular in cross section the opening of the groove outwardly being considerably narrower than the diameter of said inner part with the opposite walls of this opening parallel thus affording at the end face efficient cutting edges and angles. The lower openings of the grooves through said end face divide the end face into two opposite like regions, and the end face is hollowed concavely with two concentric zones 7 and 8 to the outer circumferential or arcuate reaming edges of the widened head part 4 of the drill.

The inner zone 7 is positioned at a greater angle to the axis of the drill than the outer zone 6. This provides a sufficiently sharp reaming angle or edge to the tool which can be easily dressed when necessary, while the inner zone buttresses the outer zone of the end face, adding sufficient strength thereto.

Said end face is shaped with a diametrical anticlinal cutter 8 whose opposite parts cross the said sets of zone parts 6 and 7 medially. The middle of the cutter 8 is hollowed out at 10 anticlinally with an edge 9 in line with the cutting edge of said cutter, and the lower ends of the longitudinal

grooves 3 communicate with said hollow 10. The cutter angle 8 projects beyond the reamers 4-6.

The end zones 6 and 7 together provide crushing faces, for small fragments of rock cut away by either the reamers or said transverse cutter 8, the grooves 3 being water conduits for receiving or discharging water, the sides of the drill being spaced apart from the walls of the drill hole except at the location of the reamers 4-6.

It is important in drilling through non-homogeneous strata or tilted strata, to provide a drill-bit of the above description, where the circumferential lengths of the pair of reamers is the maximum possible, because in the varying degrees of hardness, or in case of cracks in the rock, or extreme tilting of the strata, any other shape of the reamers where they are of relatively small circumferential length, would find faults and unevenness which would be detrimental in the producing of a perfectly shaped drill-hole, such as is made by the above described longer reamers.

The reamers thus cooperate with the transverse diametrical cutter 8, while the latter is excavating the bottom of the drill-hole as the tool is lifted and then dropped, and while the tool rocks from side to side, hastening the drilling work to effect the drilling in about one third of the time required by other bits of previous design.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is:

1. A drill-bit having opposite arcuate reaming cutters the end face of the bit sloping relatively steeply to the cutters for a distance inwardly with the inner part of the end face sloping at a less angle relative to the cutters to buttress and support said outer parts.

2. A drill-bit having opposite arcuate reaming cutters whose ends are spaced relatively narrowly apart, the end face of the bit being sloped from said reaming cutters toward the axis at different inclinations to afford small angle cutters with an inner abutment, said end parts together providing crushing faces, and a transverse cutter projecting from said end face across both reaming cutters.

3. A drill-bit having oppositely positioned reaming cutters, the end face of the

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Thus, it would have been obvious to one having ordinary skill in the art at the invention was made to have combined the chisel of Neamand with grooves as taught by Watson in order to provide water conduit for receiving or discharging water to cool down the chisel during extremely hot working condition caused by the friction between the chisel and the workpiece.

Regarding to the limitations of number of grooves, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized a number of grooves set forth in the claims, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Furthermore, the result would have been expected. The applicant has not cited any criticality of the number of grooves.

Regarding to the limitations of the cross section, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the cross section set forth in the claims, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. Furthermore, the result would have been expected. The applicant has not cited any criticality of the cross section in the specification.

Response to Arguments

3. Applicant's arguments with respect to claims 2-13 have been considered but are moot in view of the new ground(s) of rejection. Please note that the specific limitation of "extending to the chipping tip" in the combination as claimed in newly presented claim 13 necessitated a new ground of rejection presented above. In accordance with MPEP

2144, rationale to modify the reference which is different from applicant is permissible. Therefore, the above 103 rejection has met the basic criteria for establishing a prima facie case of obviousness.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

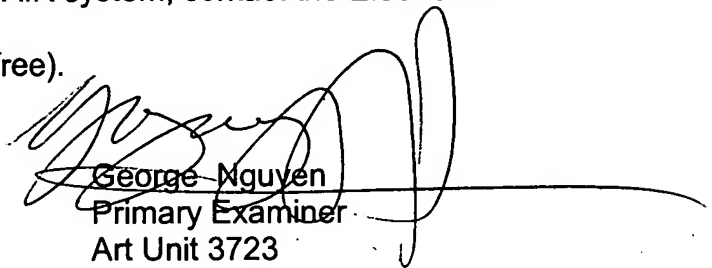
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Nguyen whose telephone number is 571-272-4491. The examiner can normally be reached on Monday-Friday/630AM-300PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Hail can be reached on 571-272-4485. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GEORGE NGUYEN
PRIMARY EXAMINER


George Nguyen
Primary Examiner
Art Unit 3723

GN – January 14, 2005